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Production Credit In Florida

By J. FRANCIS COOPER, Extension Editor

AGRICULTURAL EXTENSION SERVICE STATE OF FLORIDA

Farm Credit Administration

Progress of production credit in Florida—where the short term agricultural financing program of the Farm Credit Administration has taken a firm hold—is marked by at least one outstanding performance by a production credit association. Florida has 25 of these production credit associations but obviously it would be impracticable here to relate the experiences or accomplishments of all of them. One, however, the Bartow Citrus Production Credit Association, has made such a remarkable service record that it might be well to set forth briefly the manner in which this Association has helped Florida citrus growers and show therein the reason for its prominence in the Administration's southeast district.

The territory of the Bartow Association includes sixteen citrus producing counties, the Association making loans only on citrus crops. At the time this is being written (the latter part of August) the Association has handled close to 200 loan applications, aggregating more than \$300,000. The majority of these applications were received and disposed of during a period of less than twelve weeks.

The extent to which the Association has been of help to the citrus growers can best be understood when it is remembered that the past three or four citrus sections have been anything but profitable for the orange and grapefruit. Low markets

have been the rule rather than the exception and have been aggravated by rather severe droughts, augmented by tree pests and diseases, and general "tough breaks." This era of disheartening setbacks had left hundreds of citrus growers in acute need of financial help.

Into this situation came the Bartow Association with its systematic method of relieving financial distress. Growers who had reached the end of their resources eagerly availed themselves of this easy-money. Groves that otherwise would have gone without sorely-needed fertilizer and spraying, received their food and immediately responded; tractors and other grove equipment, long in need repair, were given prompt attention; dead and fruitless branches in the drought-injured trees were pruned off by joyous crews of laborers who once again found welcome pay envelopes awaiting them; growers who had been bound to unsatisfactory marketing methods obtained funds with which to gain selling freedom. In short, life in the state's citrus belt took on its old-time customary activity. Production credit was proving its worth!

The Bartow Association possibly is more than ordinarily fortunate in the personnel of its board of directors. All of these men—seven in number—are active citrus growers and are prominent in the industry's affairs. In fact, they are men who have

had many years of experience in citrus growing and hence are well fitted to handle their job of helping their neighbors. It was not my intention, in preparing this article, to go into personalities, but it would be pointless to tell of the Bartow Association without explaining that a large part of its successful administration has been due to the fact that its Secretary-Treasurer, Sam J. Overstreet, happens to have had considerable experience in agricultural credit work and consequently has been able to handle intelligently and capably the many complicated problems of financially assisting citrus growers who merit such help. Without exaggeration, Secretary Overstreet (who incidentally was an important key man in the Regional Agricultural Credit Corporation's financing program in Florida prior to his joining the Bartow Association) can truthfully be said to be the primary "why" of the Association's excellent record.

Secretary Overstreet himself will tell you that hard work and a genuine interest in helping growers along sound financial lines, is the real reason the Association has made a name for itself. He gives quick credit too to the county agents in his territory whose help, he points out, has been a vital factor in the all-important job of acquainting the growers of the fact that production credit is available to them. The recital of how his

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Citrus Fertilizers And Lime

By FRANK L. HOLLAND

MANAGER FLORIDA AGRICULTURAL RESEARCH INSTITUTE

In recent seasons there has been considerable discussion of lime for citrus. During the same period there has been much discussion and shifting back and forth of ideas concerning fertilizers generally.

For the most part, the discussions of fertilizers have centered around nitrogen, available phosphoric acid, and potash, with disregard of calcium. Likewise the discussions of calcium, or lime, have generally disregarded fertilizers.

Since all four elements, and many others, are essential to citrus trees it would appear necessary to consider them together in a fertilizer program, and any program that centers on one with disregard of the other may be looked upon with some doubt.

Some expensive lime experience accumulated a good many years ago, and a similar kind of fertilizer experience accumulated in recent years, would seem to bear this out.

Probably no one will dispute the fact that citrus trees require considerable quantities of calcium, and further, that much of the soil planted to citrus in peninsular Florida is naturally deficient in calcium, as well as other elements.

With this in mind it may be of some interest to check up and see where the calcium has been coming from all these years during which most groves have received mixed fertilizers as a basis for a general fertilizing program.

Following this it may also be of interest to give brief consideration to changes in fertilizer design that take calcium, magnesium, physiologic reaction, and effect on the soil, into specific consideration.

Also the use of corrective mixtures for specific unfavorable soil or tree conditions has come into quite general use, and this should be considered at the same time due to the amount of calcium, and other elements, from various sources contained in such mixtures. Most of such mixtures are designed to correct some unbalanced condition, and pave the way for a balanced fertilizer program to maintain the grove in good condition.

In this whole matter of calcium and citrus fertilizers there are many points not clearly settled, and most

of us are looking forward to the time when research agencies can give us specific answers to our questions. In the meantime we do have considerable information collected from research and practical experience, on which to base programs that at least we know are safe.

Calcium in old Style Fertilizers

Former practices, as far as sandy lands went, consisted generally of three applications of mixed fertilizer per year. Mixtures used contained an average of 8 percent available phosphoric acid. This was derived principally from superphosphate, and to some extent from bone meal, tankage and bird guano.

Let us assume 20 pounds of mixed fertilizer per tree per application here as an average application to bearing trees on sandy land; and 50 trees per acre. On this basis the grove would receive 3000 pounds of mixed fertilizer per acre per year, from three applications. This quantity of fertilizer, analyzing 8 percent available phosphoric acid from sources used, would contain an amount of calcium approximately equivalent to the calcium in 800 pounds of ground limestone, but would not be in this form. This amount is arrived at by calculating the amount of calcium in the form of calcium sulphate, and in combination with phosphoric acid. The amount of calcium in any bone meal, tankage tobacco stems, peruvian guano, or other materials used, must be added to the 800 pounds to get the total limestone equivalent of all lime containing materials used. It might be well to recall here that superphosphate is over 50 percent calcium sulphate (gypsum), and that gypsum and manure are among the oldest fertilizing materials history records.

Such mixtures were better balanced as to acid and alkaline sources of ammonia, than has been the case in many instances in recent years. They also contained some acid, but desirable plant food combinations other than ammonia, and much of calcium was required to balance them. However, on the basis of present day calculations as to acidity and alkalinity of fertilizers, we know that a considerable portion of the lime in materials used in such

fertilizers, was in position to directly furnish calcium for the soil and plants.

Now, considering some changes in practices: In reducing applications of mixed fertilizer to two applications per year, and reducing the amount of available phosphoric acid derived from superphosphate, and materials such as listed above, from 8 percent to 6 percent, you have a total reduction of 50 percent in amount of lime applied per acre. In many instances the available phosphoric acid is now obtained from materials other than those mentioned above, and the amount of lime is reduced two-thirds or more.

A grower that makes only one application of fertilizer containing 8 units of available phosphoric acid from above listed materials, reduces lime applied per acre to one-third of that applied in practices outlined above.

Considering these changes, and further, considering the changes in nature of other materials used, is it any wonder that we have been in trouble in recent years in many cases, because of an actual calcium deficiency, and the effect such a deficiency has on the soil, the plant, and the efficiency of other plant foods.

Take the case of "Bronzing" of citrus on high sandy land. In the majority of cases where fertilizer records have been available, it has been found that fertilizing practices, as followed on the properties in recent years, have really been "incomplete". This is true, in spite of the fact that growers, in some instances, have been using a so-called "complete" fertilizer. The program is not "balanced".

It should be understood that a mixed fertilizer can contain as much phosphoric acid as is desirable, without containing any calcium or magnesium. This is an important point for growers to keep in mind when buying fertilizers; especially since the State law, at the present time, does not require any statement as to lime content, sources of lime, degree of fineness of lime materials, and other important points in connection with this element.

Leading Fertilizer Companies Protect Growers in This Regard

A number of the leading fertilizer companies, who actually mix their fertilizers in Florida, have taken the initiative in protecting growers along the line of the above paragraph; and incidentally, this further means that growers have access to fertilizer mixtures that are not only safe, as far as effects on the soil are concerned, but also are better balanced and more complete, due to a wider range in plant foods used in such mixtures. In this regard such companies are putting into practice the facts that have been developed through research work by the U. S. D. A., Experiment Stations, and their own research agencies.

Several brands, or series of brands, are made up by various companies as "neutral", or "basic". However, many of the mixtures will be "slightly acid", and there will be mixtures that are deliberately made "acid" for use where conditions warrant same.

The great majority of mixtures, for use in Peninsular Florida, will probably be kept slightly acid, or neutral. If an excess of limestone should be included in fertilizer mixtures, either purposely or erroneously, so that they would become basic, their continued use might possibly be detrimental to citrus on some of our Florida soils.

It goes without saying that the above statements plainly indicate the necessity of accurate chemical control of fertilizer mixtures. This simply means that when fertilizers are bought on the basis of their reaction, the purchaser should be sure that the company supplying him has such chemical control over their fertilizer mixing.

Dolomitic Limestone lends itself admirably to fertilizer mixtures, in connection with the above. As is generally known, this material contains large quantities of magnesium, as well as calcium. It can be used in most fertilizer mixtures with perfect safety, and in this regard it has superiority over ordinary limestone. Dolomitic Limestone does not cause any measurable loss of ammonia from fertilizer mixtures, neither does it change any appreciable quantity of phosphoric acid from available to unavailable forms. Therefore, its use makes it possible to supply calcium and magnesium as desired in fertilizer mixtures. Dolomitic Limestone, however, is not considered the best source of calcium or magnesium for all conditions.

Theory and Practice of Lime Use

It is extremely easy to say to a grower that his grove needs lime, without being careful, particular, or specific as to a program that will correct existing troubles, and will prevent their recurring. It is much better for the advisor and grower to go into it on a rational basis, and plan a balanced program.

It might be well to recall here the severe epidemic of liming groves in central Florida, about fifteen or twenty years ago. Some groves that were put in unprofitable condition by unwise use of lime, have only recovered in the past two or three years. Some present day growers, who were not in the state at that time, had no knowledge of this trouble from improper liming. However, many of the growers who got into this trouble are still here, and if any grower today is following or planning to follow an erratic liming program, we simply suggest that they talk first with some grower who had bitter experience along this line some fifteen or twenty years back.

Corrective Applications

In some cases, straight applications of certain lime materials are probably desirable. In a great majority of cases WHERE TROUBLES ACTUALLY EXIST, it is felt better to apply lime in mixtures with other elements. Such mixtures have triple value; they permit supplying calcium in a number of forms, some of which are not well adapted to application alone, or to fertilizer mixtures; they permit applying other elements combined with or deliberately mixed in with the lime materials, such as magnesium, iron, manganese, zinc, etc., and due to the chemistry of such mixtures, they permit of the use of larger quantities of lime at one time, than would be safe if straight lime were applied. This involves certain chemical facts regarding efficiency and safety of mixtures, which it is not considered necessary to go into here, but which is an important point when it is desirable to apply large quantities to quickly correct a very bad condition.

Following original application for specific correction of troubles, it is then well to adopt a fertilizer program, which involves the use of mixed fertilizers containing enough calcium and other elements in such forms and from such sources, as will supply the needs of the soil and the trees.

Growers should be interested to know that the United States Department of Agriculture, in its program of citrus fertilizer experiments in

Florida, follows a program that calls for three applications of mixed fertilizer each year. The mixtures, in turn, are so made up as to contain, or are supplemented with, certain quantities of calcium, magnesium and other elements; the idea being to determine if such a program would gradually correct existing unfavorable conditions, and insure soil fertility, productiveness and the health of the trees.

Some lime materials can, of course, be applied by themselves. However, the cost of making extra applications will generally balance the cost of applying such materials in a regular balanced fertilizing program. This would not necessarily be true with some annual crops, where the fertilizer is applied in a different manner, and where amounts of lime materials would be excessive compared with the amounts of fertilizer materials.

Conclusions

Citrus growers, particularly on thin, sandy lands, should recognize the fact that their crops and soils require calcium and other elements in addition to nitrogen, phosphoric acid and potash.

They naturally are concerned with the permanent safety of their fertilizing and cultural programs. They are interested primarily in keeping their soil in good condition; most efficient sources and mixtures of plant food; and the lowest cost when the other two factors are considered. Quite naturally the grower has a "profit" as his first and last concern, and in this respect is no different from any commercial firm.

There are, of course, exceptions to any statement or rule, but it is felt from experience and observation up to the present time that the most satisfactory, efficient and safest program is that which involves the use of calcium sources in mixtures that supply other elements desired, and as part of a balanced fertilizing program.

TEXAS CITRUS LICENSE AMENDED

An amendment to the license for shippers in the Texas citrus industry changing the word "association" to "exchange" in sub-section A, section 1, article 2, and deleting the word "distribution" in sub-section D., section 2, article 2, has been signed by the Secretary of Agriculture H. A. Wallace, to become effective 12.01 A. M., Wednesday, October 19, the Agricultural Adjustment Administration announced.

America's First Citrus Grove

Columbus Disclosed As First Citrus Importer—Famous Explorer Planted First Grove In 1493

By VIRGINIA KIFT BARNES

At last the unknown and mysterious personage who first imported citrus fruits to America, has been discovered. It is none other than Christopher Columbus himself. Even the date of the export, and later the date of the import, have been found, as well as the exact spot in the Old World from which the seeds came, and the exact place of their first planting in the new found land.

A crude orchard it must have been, judged by present day standards, and whether it grew to bear fruit for the colony may never be ascertained, as the site was abandoned a few years after its first settlement.

The question of who first brought citrus to our shores, and when it might have arrived, has been a speculation for many years. Citriculture writers have often discussed the matter. Mr. Clark Powell in his book "Culture Oranges," (1930) makes the positive statement: "No record exists of the exact date of the first introduction of citrus to America." Mr. Hume in the "Cultivation of Citrus Fruits," (1926) writes: "The date of the introduction of citrus is a matter of conjecture." Mr. Jefferson Thomas in a splendid article on the history of citrus fruits in the July, 1934, issue of this magazine was unable to aid to our knowledge of the exact date of the first importation of citrus to America, but cited many interesting facts about the fruit, and its early growth in Florida.

In the course of a Survey on Raw Products, now being carried out by The New York City Department of Markets, the data came to light. The research reveals Columbus, the explorer, in a totally new light. He is shown as a grower, and horticulturist, pondering over the difficulties of providing his colonists with the foods to which they had been accustomed in Spain, encouraging the planting of gardens and orchards, vineyards and wheat fields.

The book in which this material is recorded was written in Spain over a period of years, from 1527 to 1559, but remained unpublished until 1875, when it was finally printed in Spanish. Certain historians visiting in Spain have had access to the manuscript, but it has never been

translated into English in its entirety. It is Bartolome de las Casas' "Historia de las Indias." The quotation below is from Libro 1, Capitulo 83, page 3.

First Known Mention Citrus Fruits Being Imported To The New World

Las Casas refers to Columbus' second voyage to the New World, and describes the departure as follows:

"Wednesday, the 25th day of September, of the same year, 1493, before the sun had risen, he had the sails loosened, and seventeen caravels and loads of provisions went out of the Bay of Cadiz; he ordered them to steer the boats to the southwest, in the direction of the Canary Islands; and on the arrival at the shore of the Grand Canary Island, which is the principal one of the seven. But he did not wish to stop there and therefore, at midnight, he again had the sails raised, and the following Saturday, on the 5th of October, he took the direction of the Island of Gomera, where he was for two days.

"During this time, with great haste he provided himself with some cattle, which he and those who came there with him, bought, such as yearling calves, and goats, and sheep; and among other things, certain ones of those who came there, bought eight pigs at 70 maravedis apiece.

"From these eight pigs, there have multiplied all the pigs, which unto this day inhabit the infinite Islands of all these Indies. They bought hens, and also grains, and seeds of oranges, lemons, citrons, melons, and all kinds of garden vegetables; and this was the origin of everything that is there today of the things of Castille."

So from the mythical Hesperides of Ferrarius the "Golden Apples" were carried by this Renaissance Perseus in his white winged caravels to the shores of the New World. The incident is strikingly similar to the old Greek Myth.

Thus the exact date, and the exact spot in the Old World—Gomera—in the Hesperides, the Fortunate, or Canary Islands, is given as the place from which our citrus came. The varieties are mentioned — oranges, lemons, and citrons. There are very

few fruits indeed about which we can ascertain such definite information.

Columbus, on this second voyage left Spain, September 25, 1493. He awaited favorable winds at the Island of Gomera, and finally set sail October 13th.

On the 22nd day of November, 1493, he sighted the Island of Hispaniola, now Haiti-San Domingo, and found the fort he had left at La Navidad burned to the ground, and not one colonist remaining. He decided to build a second fort, and started a new colony, "Isabella," on the north side of the Island, about thirty miles east of the present boundary between Haiti and San Domingo, not far from the present town of Monte Cristo.

Las Casas relates:

"Here he unloaded his ships of provisions, live stock, and materials, built a fort, storehouse and church, set out orchards, planted gardens, and with great diligence erected the new city."

Thus we are assured that Columbus not only imported the seeds, but he actually planted and "set the orchards" with them, we have a list of the seeds, three of them being citrus, we may assume that this was America's first citrus orchard, and Columbus the first citriculturist on this side of the Atlantic.

Columbus himself referred to this orchard by inference, as well as his other plantings, in which he took keen interest, in a letter which he wrote to their Majesties from the Islands in February, 1494:

"... the preservation of health depends upon this people being provided with the food to which they are accustomed in Spain... and the provisioning should continue until a supply can be secured from that which is here sown and planted. I mean from wheat, barley and grapes... they have sown seeds and we are very sure that in this country wheat as well as vines will grow very well. But it is necessary to wait for the fruit, and if it be such as the rapid growing of the fruit, and some few vines, which have been planted, suggests, it is certain that there will be no need of Andalusia or of Sicily.

And the same applies to sugar canes, judging from the way in which some few that have been planted here taken root."

The Majesties upon receiving this letter ordered that the land should be sown as soon as possible with many things, and all that was needed be sent at once for this purpose. The sowings prospered and it was recorded that wheat sown in January was cut in March, fruit stones sprouted in seven days, and sugar canes grew equal rapidity.

In 1496, others state 1498, the site of Isabella was abandoned as unhealthy, and a new fort San Domingo, which still retains this name, was established. An old print of this Spanish city, published in 1671, pictures a walled, fortified town, on the bank of a river. Outside the walls on the opposite shore of the stream, what appears to be an orchard, with trees set in rows, is shown. It may be stretching the imagination to suppose these to be citrus trees, but they do indicate some sort of cultivated fruit orchard, and a record of what they were may someday be found.

Was Citrus Native To America?

Was citrus of some sort growing in America previous to the discovery? If it was, it is odd that Columbus made no mention of it in his Journal, which recounts in great detail the enchanting flora and fruit of the Islands which he says is as different from that of Spain as day is from night. He does however recognize and mention palm-trees, forests of pine, spices, cotton, aloe, mastic rhubarb and cinamon, and adds that undoubtedly countless other things will be found. But he does not refer to oranges, which would surely attracted his attention, if he had seen them.

Half a century later, the fruits of Columbus' efforts at cultivation are noticed, and Old World travelers begin speaking of citrus fruits. In 1555 the "Decades of the West Indies," refers to the "the kynde of citrous which are commonly called lemons," which are plentiful in the Islands. A passage in the "Discovery and Conquest of Terra Florida," published in 1557, in describing the Island of Cuba, states:

"Of the fruites of Spaine there figges and oranges and they beare fruit all the yeare because the soile is very ranke and fruitful."

In 1587 Thomas Cavendish, the third man to circumnavigate the globe, refers to an orchard of lemon and orange trees at Puna, on the West Coast of South America, now

in Ecuador, and also states that when at San Blas, on the West Coast of Mexico, lemons and oranges were brought to his ships by the natives. Acosta in the "History of the Indies" written in 1598, mentions the growth of oranges and lemons in America. By 1799, during Humboldt's travels in the Antilles, the citrus had become an integral part of the Island vegetation, causes Humboldt to remark:

"It would seem as if the whole Island of Cuba had been originally a forest of palm, lemon and wild orange trees," and he ventures the opinion that the oranges, which bear a small fruit are probably anterior to the arrival of Europeans. Caldouch states that Brazilians believe their small bitter orange to be of native origin, and Phillips, 1693, speaks of the wild orange as apparently indigenous to Mexico, Porto Rico, Barbados, and Bermuda.

A close scrutiny of these references will show, however, that every place where citrus fruits were observed, the Spanish explorers had preceded the travellers; and Herrera in a most enlightening passage compares the imported fruits to the imported Africans in the following manner:

"The Africans prospered so much in the Island of Hispaniola, that it was the opinion, unless a negro should happened to be hanged, he would never die; for as yet none had ever been known to perish of any infirmity. Like oranges, they found their proper soil in Hispaniola, and it seemed even more natural to them, than their native land."

If Oranges Were Native Fruits Why Did Columbus Import Them?

If, on his first voyage, Columbus had found oranges in the Islands, it is unlikely that he would have imported them on his second. If they had grown in the Islands from time immemorial, as Humboldt seems to infer, it seems impossible that Columbus would have not mentioned them, along with his description of the pine and palm trees. Mr. Hume explains how they became so generally disseminated after the discovery:

"The fruit was obtained by the Indians and carried about; seeds dropped eventually produced trees where they had been deposited. As a result wild groves were formed on shores of lakes and streams."

Ponce de Leon explored the St. Johns River region on his first discovery.

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The Citrus Industry

with which is merged The Citrus Leaf
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CITRUS CONTROL PLAN SUBMITTED

The long-awaited and much-discussed citrus control plan for Florida has at last been submitted to the industry of the state by Agricultural Department at Washington, and its essential features are printed elsewhere in this issue. The proposed agreement is now being considered by the several agencies and factors in the state upon whose approval depends the beginning of its operation in the state.

As had been anticipated, the proposed agreement is meeting with hearty approval in some quarters and with equal disapproval in others. Certain changes in the set-up are being demanded by some interests before final approval is given.

The publication of this issue of The Citrus Industry follows too closely upon the announcement of the proposed agreement to permit of careful study or extended review at this time. The Citrus Industry has been an ardent and consistent advocate of unified control and hopes that the present agreement may be so adjusted as to become adaptable to the requirements of the industry in Florida. If minor changes are required to make the agreement workable, they should be made speedily, to the end that the agreement may become operative without further delay and that growers may reap the benefit of unified control before the season is further advanced.

STOCK EXCHANGE LISTING

The proposal to open the New York Exchange to the listing of future dealings in citrus fruits is meeting a varied reception in Florida citrus circles.

Advocates of the plan declare that such listing of citrus fruits on the Exchange markets

would result in an F. O. B. market for Florida fruits. Being no expert in the workings of the Exchange markets or in the dealings in futures of perishable commodities, the writer confesses his inability to grasp the philosophy of this reasoning. Gambling on the price of citrus one month or two months or six months in advance MIGHT result in bringing about an F. O. B. market—but in common with many other citrus men in Florida we are unable to understand how it will do so.

Citrus is highly perishable. Unlike cotton or wheat or corn, it cannot be stored indefinitely. When it is ready for shipment, it must be shipped within a very short time—and the markets in the future, as in the past, will quickly respond to any over-supply, regardless of whether or not futures are being dealt in on the "board."

We would like to believe that dealing in citrus "futures" would result in all the benefits its advocates predict, and we hope we are mistaken in fearing that it will not—but in regard to this proposed panacea we must admit that we are a native of a state in close proximity to Missouri.

THE CITRUS ESTIMATE

Official federal estimate of the 1934 citrus crop in Florida places the probable figure at 36,000,000 boxes, as against actual shipments of 28,800,000 boxes last season.

This forecasts an enormous crop and a very material increase over last season's heavy production. Much as we would like to discount this government estimate, the experience of the past leads us to believe that the federal estimator probably is not far wrong. At any rate, every careful observer must admit that there is an enormous crop on the trees and that barring some adverse act of nature, this crop will be harvested and most of it will find its way to market.

In view of this heavy anticipated production, it behooves the growers and shippers of the state to get together and exert every influence possible to so control distribution that no markets may be glutted and that none but fruit of superior quality finds its way to market. Uncontrolled distribution, or the shipment of inferior fruit or fruit of poor appearance, can result only in a disruption of the markets with consequent loss to the growers.

The present situation, with similar heavy production in California and Texas, calls for united action, preferably under federal supervision, to the end that the growers may receive at least some measure of profit from the excessive crop which now burdens their trees. This is particularly true of grapefruit, of which there is an estimated 11,000,000 box yield in Texas.

Florida citrus growers do not need to worry about quantity production; there will always be an abundance of fruit. What we need worry about is QUALITY production, which can be obtained only by proper fertilization, proper attention to spraying and proper cultural methods.

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IMPRESSIONS

By Frank Kay Anderson

First noticeable effect of the AAA administration of Florida citrus affairs, which some early predicted as bound to reduce the number of citrus operators, is found in retirement from the field of F. B. Godfrey & Co., of Orlando . . . Fred Godfrey now represents for Florida a large Chicago receiving concern . . . but F. B. Godfrey & Co., will remain in operation to handle its long established business each Spring in Georgia peaches . . . And that brings up an incident of about seven years back which has just come to light, as murders and other things do . . . At that time J. G. (Jack) Welch, head of the AFG export department in New York, lived in Orlando as manager for the Atlantic Commission Co. . . . Each Saturday R. B. Woolfolk of the AFG, Fred Godfrey and Jack Welch met on the golf links and had a close tussle . . . to make things interesting there were small stakes . . . but it was a bargain that the winner must on the following Sunday drop his winnings into the contribution plate at church . . . One wild Saturday there was a lot of excitement, and some doubling-up . . . As a result Fred Godfrey was winner by five dollars from the other two . . . So on Sunday he put a nice new five dollar bill on the contribution plate at the Presbyterian church in Orlando . . . but, so the act wouldn't set a precedent, he appended a note telling of the circumstances . . . After services there was more excitement . . . the pastor and elders firmly declined to receive gambling money . . . the five dollar bill was respectfully declined, and returned . . . And Fred Godfrey, having dutifully "asked for fish," kept it for his own uses . . . One point which never has been satisfactorily settled is the question why he found it necessary to append the note when he put the bill on the plate . . . H. L. (Harry) Borland of Ocala, the Duke of Marion, says this writer runs a hold-up racket on citrus personages . . . extracting expensive lunches as a consideration for mention in this column . . . Best evidence that he is all wrong is the fact that the Hon. H. L. Borland has many

times been mentioned here . . . To the gentleman's intimate acquaintances that will be evidence enough . . . Into Orlando, and running plump into Ed Dow of Tampa, E. DeWitt Dow to you, and Mrs. Dow . . . We explain to him our indignation at Harry Borland's remarks; and assuring us there is nothing to them, Ed Dow takes us to lunch . . . following which we go to witness a demonstration of the new drum-crate for which he is now state agent . . . some remarkable improvements made in that device since it was commercially introduced last season . . . We are particularly impressed by the one-bushel size drum . . . unless we are greatly mistaken here is something which holds the possibility of emancipating the industry from the evils of the bulge-pack . . . and of putting oranges and tangerines on the markets in the most economical and attractive way yet devised . . . for grapefruit the two-bushel container seems plainly indicated . . . Greatly regret to record here the passing of Ed L. Wartmann of Citra, at the age of 77 in an Atlanta hospital . . . a member of the well known firm of Crosby and Wartmann owning largely producing acreage near Citra which has done its part to make Marion County pineapple oranges truly famous in the markets of the country . . . No one better than he deserves title of being the father of higher education in Florida . . . As a member of the Legislature, in 1905 he was chairman of the special committee which devised and steered passage of the Buckman bill establishing the University of Florida at Gainesville, and the Florida State College for Women at Tallahassee . . . Then during 21 years, from 1907 to 1928, he served as a most active member upon the Board of Control which administers those institutions . . . In less than thirty years our state university has grown to be one of the outstanding men's schools of the country . . . and our state women's college now ranks as fourth among the women's college of the world . . . Few men live to see the pet projects of their younger days so successfully materialize and

develop . . . particularly unselfish civic undertakings of their originating . . . In the death of Ed L. Wartmann Florida has lost one of its outstanding citizens . . . and one of the pillars of our citrus industry is gone . . . A. W. McKay of the USDA, more recently of the AAA, who during the June meeting in Washington came in strongly for mention as possible selection for coordinator of the citrus program, years ago used to work for the old H. C. Shrader Co., in Orlando . . . in the palmy days of the late Henry Shrader . . . Meeting on the streets of Orlando with R. W. (Bob) Sims of Nitrate Agencies . . . and he just off on vacation in the middle of September to a place in North Carolina he had never seen . . . be we had read the same advertisement, and it looked good . . . Frank Balfour of Orlando, long a cog in the Richardson Fruit Corp., now selling crates for a well known Georgia factory in which his brother is interested . . . Our filling-station man just returned from a three month's visit to his native England reports things moving along nicely there . . . real recovery, he says . . . with something very like a building boom in London and vicinity . . . Those Britishers do have the habit of muddling through, as they put it . . . Any farmer or grower overburdened by debts or facing possible foreclosures can now obtain quick relief through the nearest federal court under the workings of the new Frazier-Lempke Act . . . All the farmer needs is a ten dollar bill for a filing fee . . . the conciliator and other officers are paid by the court . . . it isn't the same as bankruptcy, but the effect of the law's operation is much the same . . . and about the least a farmer can obtain is a five-year postponement of any impending foreclosure . . . The well known W. L. Pedersen, president of Waverly Citrus Growers Assn., with his daughter, Gertrude, spent the summer in Denmark, among other things participating actively in the Fourth of July celebration there on behalf of Florida . . . and as an afterthought ob-

(Continued on Page 14)

*Cheaper
in the
long run*



-because they're
CORRECTLY BALANCED!

The cost of fertilizer cannot always be measured by the price per ton. Fertilizers that fail to provide every essential plant food are expensive, regardless of the price per ton. And haphazard mixtures containing too much or too little of any one element usually cause trouble in the end. ● In the long run it's cheaper to use fertilizers that are correctly balanced—fertilizers that are known to be safe and dependable. Gulf Brands, for instance. ● Gulf Brands of Fertilizer are scientifically formulated to furnish safe, uniform crop nutrition over long periods. They are really *balanced fertilizers*—made expressly for Florida soils. Essential elements are contained in correct proportions—each derived

from carefully selected materials, to suit specific crop purposes. Whatever your individual requirements are, there is a Gulf Brand to suit your exact needs. ● And with Gulf Brands goes the reliable Gulf Field Service which gives you year round grove and farm inspection, with dependable advice about plant diseases, pest control, and fertilization practices. ● So if your crops have not come up to your expectations—if your profits have not been all that you've hoped for, change to Gulf Brands of Fertilizer and Gulf Field Service. You'll find them cheaper in the long run.

THE GULF FERTILIZER COMPANY
36th St. South of E. Broadway, Tampa, Florida

GULF BRANDS of FERTILIZER

Whatever you're growing, there's a Gulf Brand to fit your exact need.

IMPRESSIONS

(Continued from Page 12)

taining a Class A testimonial for Florida oranges from his majesty King Christian X... From what we had read we have long admired the king of the Danes... now we must applaud his taste in citrus fruits... "Woolfolk Is Gloomy," screamed a headline in the Tampa Tribune... but it turned out to be Coach Woolfolk of Southern College who was having an attack of blues right out in public... and it didn't have a thing in the world to do with R. B. Woolfolk of Orlando... the only thing blue about that AFG dignitary being the color of his goose... From the College of Agriculture at Gainesville the announcement that J. E. Turlington, who has been head of the department of agricultural economics, has been granted a year's leave of absence because of bad health... That's bad news... a darned good man, J. Ed Turlington, a genius at figures with a real farm background... and a most likeable chap, too... And V. V. (Vic) Bowman of Winter Park has joined the Agricultural College faculty family... well known among many citrus growers because of his connection first with the American Cyanamid Co., and later with the Florida Insecticide Co., Vic ought to fit well into the academic atmosphere at Gainesville... also he knows a lot about colleges... after graduating from Purdue University he went to war and brought back from France a bride who for several years was the head of the French department at Rollins College... Just been looking through a personnel book of the technical workers of the U. S. D. A... Who thinks up the titles for government employees?... Wonder if it's the same guy who names the Pullman cars?... a title for every man, and most of them a mouthful... and the names of the bureaus and "administrations" are mostly several mouthfuls each... A government "administration" is an undertaking which hopes to be a permanent bureau some day... and history shows that mostly they do... But to get back to the individual workers... following each name the initials of the collegiate degrees accumulated... some of these chaps must have been of full middle-age before they got through colleging... and in places some queer quirks in that the nature of the college degrees acquired seemingly has small bearing upon the nature of the worker's present employment... Nobody can tell just

how old Fame may tag onto him... For instance there is Rex Beach of Avon Park, New York, Paris and Nome... widely heralded as the most famous alumnus of Rollins College, he is much feted there... and has been president of the alumni association... Yet strangely enough the famous author attended Rollins for a period of only a few weeks in his youthful days... Why doesn't Moler Barber College of Kansas City confer an honorary degree on Paul Stanton of Frostproof and thus lay claim to him?... For an honorary degree it isn't necessary that the victim ever matriculated at the conferring institution... which is not to say that in our opinion the Stanton person couldn't have made the grade at that Kansas City seat of learning... we believe he could have... Because of the fact that one of our boyhood buddies is now head of the department of preaching at the divinity school of Yale University we are encouraged to believe most anything can happen in college... A casual meeting in Orlando with Colonel Bob Taylor, former fruit and vegetable agent for the Atlantic Coast Line... now on the retired list, but a lot of activity in him yet... Living in Eustis but unable to sit still and vegetate... his citrus crop estimates for many years have been a big Florida feature... Look out for another one... Might as well expect a bird dog to lie by the fire all winter as to expect Colonel Bob to lay off figuring out what the citrus crop is going to be... And that reminds of some recent discussion of a possible logical basis for a national prorate of citrus under the AAA... A suggestion that it be upon basis of average of past five year's shipments, while state prorates under it be based upon the government crop estimate... That would hardly be fair to Florida... a lot of young acreage of winter oranges here increasing in yield yearly... some young acreage just coming into bearing... on the other hand California's acreage of winter oranges (navels) less than it was five years ago... still less than it was ten years ago... In fairness Florida should be entitled to ship in proration to its increased production... in fairness to Florida growers and in fairness to the consumers of the country... No economic scheme or device can ignore costs of production and be of lasting success... The AAA, nor any other government agency, cannot afford ever to be put in the position of extending protection to producers

utilizing marginal, or sub-marginal, lands... The consuming public, which after all is the dominant influence in national affairs, will not stand for it... Can't help wondering what the face of H. L. Baskin of Orlando would look like... without that perennial pipe stuck into it... Which Latt Maxey do you know? The one who lives at Frostproof?... Didn't you know there were two?... T'other one lives down in the Glades... a full blooded Seminole of royal descent whose father named him years ago in honor of the Polk County man... George D. Wing of the AFG at Orlando was one of the depositors committee of the State Bank of Orlando not long ago appointed by depositors by order of the circuit court, which made investigation of the affairs of that institution... and brought out the tremendous sums which had been spent in the so-called "liquidation" of that and other banks under the system installed by the former state comptroller... employee payrolls and attorney's fees consumed most of the money... Lakeland Ledger says citrus fruit stealing in Florida ought to be penalized heavily... with the same enthusiasm that horse stealing used to be handled in the

Frank Kay Anderson

Agricultural Advertising

Altamonte Springs, Florida

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cattle states . . . omitting only the rope . . . but that would take so much fun out of the proceedings . . . Which reminds us that the other day just as we rode up to the postoffice at Altamonte Springs we coincided with the arrival of a carload of Apopka folks in pursuit of the stick-up men who a few minutes before had touched up Richard Whitney's bank there . . . and the bandits had gone tearing through Altamonte Springs about twenty minutes ahead of them . . . but no one had thought anything of it in advance of the alarm . . . We picked up a deputy sheriff in our car and through the afternoon wandered all around through the country in the manner of the other searchers . . . finally establishing that the bandit car had disappeared or evaporated within about two miles of the same place where the car carrying the St. Cloud bank bandits similarly had dropped clear out of sight a few months before . . . Once we thought we had them headed off over toward the big Wekiva swamp . . . but the car we were chasing turned out to be occupied by another deputy and his posse . . . It wasn't until about ten o'clock the next morning that it occurred to us to wonder just precisely what we, the particular pair in our car, would have done with them if we had stumbled right onto the gentlemen with the machine gun and loot . . . Wonder if someone will close that door over there? . . . Somehow recently we seem to chill easily in a draft . . .

TEXAS CITRUS LICENSE AMENDED TO CONTROL SHIPMENTS

A substitution for article 4 of the marketing agreement for the Texas citrus industry, and an amendment substituting for article 4 of the Texas citrus industry license, were signed October 17th by Secretary of Agriculture Henry A. Wallace. The new provisions will become effective at 12:01 a. m., October 21, when article 4 as now contained in both the agreement and license is terminated.

The changes provide for volume proration, regulation of the shipment of undesirable grade and sizes of oranges and grapefruit grown in Texas and the issuance of certificates to growers as a basis for allotments to shippers.

According to the substituted article and amendment, the control committee will estimate the quantity of fruit produced by each grower and issue certificates which shall specify the

estimated number of boxes produced. These certificates may be transferred to the shipper or shippers handling the grower's fruit and are to be filed with the control committee as evidence of the portion of the crop the shipper controls.

The basis of proration of shipments is the quantity of fruit controlled by the shipper of his current performance, depending on which rating is higher. The current performance of a shipper is to be determined by taking the shipper's past performance during a basic period, adjusting it to the current crop, and multiplying by the percentage of the crop remaining to be shipped prior to the proration period. The transfer of

allotments to shippers can be made only through the control committee.

The control committee is permitted to limit the grades and sizes of fruit to be shipped during any proration period. However, if a grower cannot ship a percentage of his crop equal to the average percentage shipped by all growers he may apply to the control committee for exemption after two-thirds of the estimated crop of any variety or group of varieties has been shipped. In the event that his claim is approved, the control committee will issue a special certificate to the grower which will permit the shipment of the stated quantity without regard to grade or size regulations.

THE VITAL IMPURITIES

Nature herself put them there for your benefit

IMPURITIES — that's the big word today in fertilization.

As scientific research reveals the relation of these so-called rare elements to plant growth, the subject becomes more and more important.

Chilean Natural Nitrate, in addition to its quick-acting nitrogen, supplies the vital impurities in Nature's own balance and proportions. It gives your crops boron, magnesium and iodine. It gives them potassium, calcium, sodium, strontium, lithium and many other essential elements. Mother Nature herself put these vital impurities into Chilean Nitrate. That's why its record of success in Florida is so outstanding.

When you order soda specify Chilean Natural Nitrate of Soda. That is the way to play safe.

Chilean NATURAL NITRATE

THE OLD ORIGINAL "SODA", THE ONLY
NITROGEN THAT COMES FROM THE GROUND

The Use Of Zinc Sulphate On Citrus

By A. F. CAMP, Horticulturist, Florida Agricultural Experiment Station

The use of zinc sulphate has proven to be a remedy for frenching (mottle-leaf or chlorosis) of citrus. This trouble has been a continual problem in citrus groves in this state for many years, and in its more severe forms has caused growers a great deal of grief. Frenching is distinguished by a yellowing between the veins of the leaves, with the areas along the veins and the edge of the leaf remaining green. If the trouble is at all severe the leaves are very small and the twigs short, giving a bushy appearance to the tree. The twigs die back from the tip and are particularly subject to cold damage in even mild cold spells. In the more severe forms of the trouble large twigs and even limbs die and the trees become progressively smaller and the yield may fall to practically nothing, the fruit usually being small and hard.

Frenching in a mild form in which only a portion of the leaves are affected is very common throughout the citrus growing area. This form is particularly prevalent on oranges and probably most common on Pineapples and Valencias. The very severe cases show up most commonly on Pineapples on sandy soil and the dying back is very severe and the trees stop bearing marketable fruit after a year or two. These severe cases have caused growers endless trouble and in the past treatments usually have brought no response. We have been carrying on experimental work in a number of groves in which the trees have been affected for 5 years or more and are correspondingly reduced in size and vigor and no fruit of value has been produced recently.

Frenching should be distinguished from other common troubles of citrus which have not been responding to zinc treatments. "Bronzing" of citrus trees is one of these troubles. It is characterized by a bronze color of the whole leaf and a tendency to shed the foliage. The leaves are not materially reduced in size. Zinc sulphate apparently does not correct this and should not in any case be used as a cure-all or to take the place of regular fertilizers.

The value of zinc sulphate was first discovered in this state in connection with the bronzing of tung trees. This trouble has been a very serious factor in the development of the tung-oil industry, and Mrs. Harold Mowry, then a member of the Horticultural Department of the Experiment Station, in 1931 and 1932 showed that applications of zinc sulphate to the soil would bring the trees back into healthy growth. This work was rapidly expanded and the treatment proved a corrective of white bud of corn, rosette of pecans and frenching of citrus. It is evident that these troubles are all related, since they respond to the same treatment. Whether the trouble is a zinc deficiency in the strict sense or whether it is the improved utilization of some other element brought on by the use of zinc has not been determined. At present all of the large groves in the older tung oil district are being treated with zinc sulphate, applied to the soil. This is probably the first widespread commercial use of zinc sulphate for such agricultural purposes.

The work on citrus followed along the same lines as that on tung trees. It was found that badly frenched Satsuma orange trees responded splendidly to soil applications of zinc sulphate. After a series of failures to obtain results on citrus, experiments were started in March of 1933 in a Satsuma grove at Gainesville. This grove was five years old and had never grown satisfactorily, though carefully fertilized and cultivated. The trees were affected with severe frenching and died back severely each winter, even though the winter was very mild. Treatments applied in March and consisting of one-fourth to one-half pound per tree applied on the soil beneath the tree brought a favorable reaction in about six weeks and by the end of summer were in good condition. An additional treatment was given half the trees in June and those receiving two one-half pound applications were in the best condition and those receiving only one-fourth pound application had not responded quite so well. All of the treated trees had

put on normal growth with large leaves, long twigs and a good green color; every tree had responded. The untreated trees were badly damaged by light frost during the winter and were almost completely defoliated by spring, whereas the treated trees had hardly lost a leaf and were in excellent condition. The treated trees set a splendid crop of fruit this spring while the untreated trees set only an occasional fruit. This is typical of the responses found in this area, but on the light soils in the citrus belt the soil applications failed to give satisfactory results and often no results at all. It was at first believed that we were dealing with another type of frenching in this area. However it was found that the trees responded to sprays with exceptional rapidity even though trees in the same grove responded little or none at all to the soil treatments.

A number of groves on the ridge in which Pineapple orange trees had been frenching severely for several years were experimented with by ourselves and others. Trees sprayed with zinc sulphate sprays during the spring months came into vigorous growth in six weeks while evidences of recovery could frequently be observed within four weeks after the spray. The recovery in these groves is astounding, there is at this time a large amount of normal growth on the trees, the frenched leaves which were on the trees when the treatment was given have greened up though they have not increased in size. Even trees which were in a very bad condition when treated in the spring put on some fruit that is apparently normal. Untreated trees in the same groves were still frenched and dying back throughout the summer. Valencias, Parson Browns, various varieties of grapefruit and tangerines all showed results.

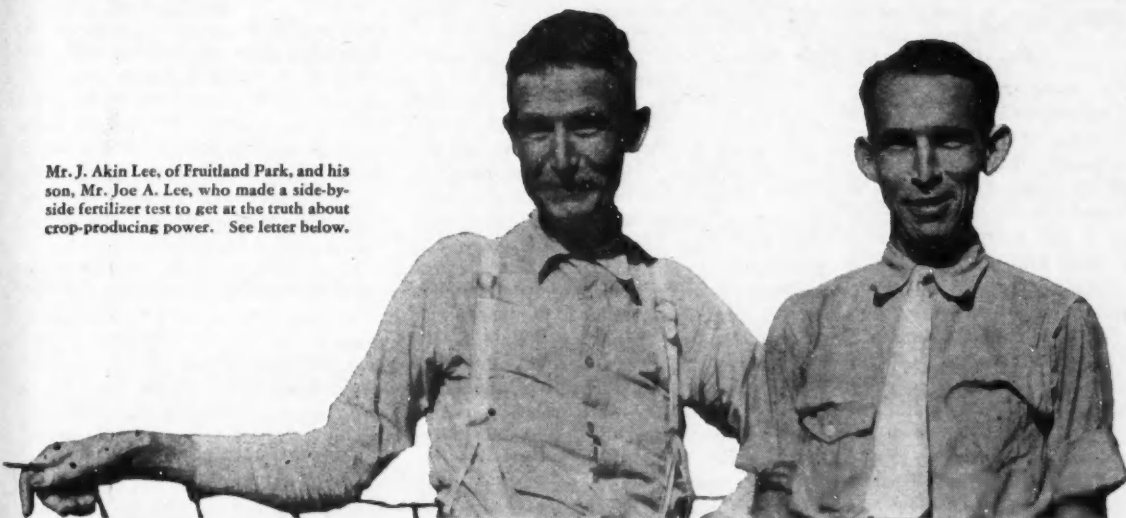
In these tests the most reliable spray was found to be a zinc lime spray of the following formula:

5 lbs. 89% zinc sulphate (or proportionately more of lower percentage zinc sulphate)

2 1/2 lbs. finely ground hydrated

(Continued on page 18)

Mr. J. Akin Lee, of Fruitland Park, and his son, Mr. Joe A. Lee, who made a side-by-side fertilizer test to get at the truth about crop-producing power. See letter below.



AGRICO WINS AGAIN!

MR. J. AKIN LEE, of Fruitland Park, has been growing melons for 40 years. Good business man that he is, Mr. Lee decided to get at the *real facts* about fertilizer, by making a side-by-side test. Here are the facts, in Mr. Lee's own words:

"I wanted to determine the merits of Agrico as compared with the goods usually used for growing the crop. So I planted 80 acres, fertilized as follows:

20 acres—10 tons Agrico East Coast Trucker, 5-7-5; 20 acres—10 tons of another brand, also 5-7-5; 40 acres—20 tons of another brand, also 5-7-5.

Melons 5 to 6 lbs. Heavier

"The melons grown with Agrico East Coast Trucker were 5 to 6 pounds heavier. The Agrico plot made more vines, held the vines better, and produced heavier melons which cut and sold better than the other plots. This experiment has convinced me, as well as neighbors who saw the field, that Agrico is in a class by itself for growing melons. While it costs a little more, the extra cost is set off many times by the heavier yields of better melons."—(Signed) J. Akin Lee & Son, by J. Akin Lee.

That letter was written October 8, 1933. On his next crop, Mr. Lee used Agrico East Coast Trucker on 40 acres of *old land*. In the following letter, dated July 25, 1934, Mr. Lee tells about his 1934 melons:

17 Cars from 40 acres—on OLD Land

"As you know, after land has been cleared and planted to melons, we speak of it as 'old land' and most growers regard it as treacherous to plant.

"This year, we planted 40 acres of melons on 'old land' and got 17 cars of melons. It was one of the worst seasons in many years and some of the best farms in my section that used other fertilizers did not come out. Our first 5 cars averaged 30.83 lbs. per melon, our first 10 cars averaged 29.81 lbs. and sold gross for \$2,692.70; the 17 cars averaged 27.7 lbs. and sold gross for \$3,607.70.

"I have been planting melons for over forty years and this is the best crop I ever raised on old land. Our melons were of such fine quality that the buyers told me they brought \$50 to \$60 a car above the average sold in this section. If we can make a bumper crop on Agrico in a year like this, we know full well that we can rely on it for normal years. Yes, you can say for us that we will never be satisfied to go back to the old type of fertilizer when we can get Agrico." (Signed) J. Akin Lee and Joe A. Lee.

Remember, these aren't our claims—they are actual first-hand experiences—duplicated all over Florida on both truck and citrus. Why not try some Agrico this year on at least a part of your own crop—and see for yourself the difference it can make. Remember, Agrico contains extra plant foods that mean extra crop-producing power, and there's a grade specially made for each crop.



Mr. T. W. Adams, of Lady Lake, who also tested Agrico against another brand, same analysis. Agrico not only produced 20% more melons, but the melons were heavier and better quality, bringing \$50 to \$55 more per car. Mr. Adams writes: "Where Agrico was used, the vines grew off faster, were healthier, and had a better color all along. I cut twice as many melons from the Agrico section on first cutting."



AGRICO

THE FERTILIZER WITH THE
EXTRA PLANT FOODS



The AMERICAN AGRICULTURAL CHEMICAL Co.

Makers of Bradley's and Agrico Fertilizers

PIERCE, FLORIDA

THE USE OF ZINC

SULPHATE ON CITRUS

(Continued from page 16)

lime

50 gallons water

Calcium caseinate or blood spreader.

In making this up the zinc sulphate should be dissolved separately in a small amount of water. If the 89% product is used the water should be put in a pail or other container and the zinc sulphate run in slowly with vigorous stirring, otherwise it will lump and go into solution very slowly. Fill the spray tank with water and start the agitator and add hydrated lime slowly so as to make a good suspension, and then add the zinc sulphate solution slowly. Add a spreader in accordance with the instructions on the package—calcium caseinate spreaders must be either screened into the tank, or mixed separately with water—and spray out the tank before stopping the agitator, as the spray is a little heavy and tends to settle badly if the agitator is stopped.

A finer textured spray may be made by reversing this procedure, if adequate care is taken. Tank may be three-quarters filled with water and the zinc sulphate added **very slowly** with the agitator running. Lime is then screened slowly into solution and the spreader added, the necessary water to fill the tank added, and the tank sprayed **out without stopping** the agitator at any point in the procedure. It is very important that the zinc sulphate is added very slowly, as otherwise it will cake in the bottom of the tank and cut valves and plungers. No damage to sprayers above that which might be expected from Bordeaux has been observed in cases where the spray is properly mixed and the sprayer thoroughly cleaned immediately after spraying.

A spray of zinc sulphate and water can sometimes be used successfully, but burning frequently results and such a spray is not recommended. The amount of lime specified above has been found to be about the minimum that is thoroughly safe at all times. Zinc sulphate has also been applied with excellent success when mixed with lime sulphur, mostly using 5 lbs. of 89% zinc sulphate to 100 gallons of 1 to 50 lime-sulphur. Sometimes wettable sulphur is used to reinforce this spray. The question with regard to this spray is the question of the efficiency of such a mixture for insect control. The addition of the zinc sulphate throws down a lot of free sulphur

THE CITRUS INDUSTRY

and may injure the killing power of the spray as far as rust mite and scale are concerned. We are not recommending that this spray be used at present if the lime-sulphur is necessary for insect control. Where the insect control is not so definitely important it can be used with good success. The zinc can also be applied with Bordeaux, by adding 5 lbs zinc sulphate and 2½ lbs. of lime to the usual Bordeaux. If the Bordeaux is as strong as 4-4-50 it is advisable to add an extra pound of lime to the above.

In spraying, the entire tree should be thoroughly covered, though it is not necessary to drench the tree heavily. Only those portions of the tree respond which receive the spray, thus making coverage absolutely essential. In several instances, half trees were sprayed with startling results and even in a few weeks the trees became very lop-sided.

Soil treatments have been markedly less successful. In some of the very badly affected groves of large Pineapple trees, the use of 10 to 15 lbs. per tree broadcasted on the soil has brought good results, though not equal to the spray in the same groves. The amounts necessary would seem to make it more economical to spray and there is less chance of failure. In some cases soil applications have failed where sprays have succeeded. This is probably tied up in the question of the soil contents and more work will have to be done on this point. Another point in favor of the spray is the fact that as yet we know little concerning the effects of zinc sulphate on the light soils of the citrus district, and until we do know more it is advisable to use as little zinc sulphate on the soil as possible.

It should be remembered in all cases that this work has not gone on long enough to know that the zinc sulphate will be continuously effective or that no harmful results may be developed in the future. In the case of many severely affected groves

this is of little moment, since it is apparently this or nothing and the grove as it stands is highly unprofitable. In such groves, we would recommend definitely the use of zinc sulphate on the basis of the present information, but we are not in position to recommend it for groves in good condition or groves that show only a trace of frencing.

It is quite probable that spraying will be found to be necessary every year. In tung-oil this is definitely true. It may prove to be less important in citrus, since the tree is not deciduous and the effects may carry over more from year to year. At the present time the grower should figure on yearly spraying. It is also to be considered that the effects can only be outstanding when the trees have a chance to come into growth. The best results have been obtained with spring spraying starting as early as the end of January. It is quite probable that the effects will not be outstanding from sprays applied after the last flush in the fall or from sprays applied under fed groves that have become hardened. In groves which were partially starved and very hard, with relatively little frencing, the frenced growth has greened up but the trees have been slow to give a growth response. Zinc sulphate will not take the place of fertilizer and trees will only respond if food is available.

Some difficulty has been faced by growers purchasing zinc sulphate, owing to the different products that are placed on the market. Three different types of zinc sulphate are likely to be encountered on a basis of water content. This water is technically known as water of crystallization and is bound up closely with the zinc sulphate but it is nevertheless water as far as the purchaser is concerned. These three forms contain 89%, 63% and 56% zinc sulphate (approximately) and prices should be adjusted accordingly. Some companies identify these three forms on the basis of zinc sulphate content as above, and others designate the actual zinc content and for the sake of comparison the following table is given:

Formula	% ZINC Sulphate	% Zinc	% Water	Amounts Relative necessary*	Value Relative per lb**
ZnSO ₄ .1 H ₂ O	89	36	11	1	5.0c
ZnSO ₄ .5 H ₂ O	63	25	37	1.4	3.5c
Zn SO ₄ .7 H ₂ O	56	22	44	1.6	3.1c

*Value based on weight of compound equal in zinc content to 1 pound or other unit of 89 percent zinc sulphate.

**Five cents per pound for 89 percent sulphate was arbitrarily used as a standard of comparison.

Purchases should, of course, be made on a basis of zinc or zinc sulphate content, as the water is of no value to the tree. All prices should be figured on delivered prices, since freight would have to be paid on wa-

ter content; thus, in 100 pounds of 56% zinc sulphate, freight will be paid on 44 pounds of water. Zinc sulphate is now available at agricultural supply houses practically throughout the citrus belt.

ONE CITRUS GROUP TURNS DOWN PRO- POSED AGREEMENT

Meeting at Lakeland following announcement of the promulgation of the new citrus control agreement, a group of ninety-five shippers and growers, claiming to represent more than half the citrus crop produced in Florida, voted to reject the proposed

citrus marketing agreement signed by Secretary of Agriculture Wallace.

The group agreed not to sign the pact, which would replace that which Secretary Wallace rescinded in August until the secretary "carried out in letter and spirit promises made to committees in Washington early in September."

Judge Spessard L. Holland of Bartow, attorney for the group, was au-

thorized to forward to Washington immediately the decision of the conference.

To Form Association

A committee of six growers and shippers was named to obtain a charter for the state grower-shipper co-operative association "as a medium for collective effort in serving and protecting our interests and those of

(Continued on page 26)

Transverse Brush Washer



8-Car Capacity

Floor Space 5 x 12 ft.

This new type washer is taking the place of the old style, long brush type in general use in Florida. The advantages are that it uses very little power, occupies half the floor space, replacements are quickly made and cost less and it does a far better cleaning job.

This machine can be fed to capacity without a single piece getting through without receiving a thorough cleaning all over. With the old type washer fruit frequently rides the crown of the brush without ever getting under the ruffles, receiving very little cleaning. That is one of the big advantages of this machine. Every orange is clean. Fruit delivered to the washer settles in the trough

between the first and second brushes and will move forward only when another delivery is made, the gentle push of the fruit behind being sufficient to cause the fruit ahead to climb the brush and settle in the next trough. Movement of the fruit forward therefore depends upon the fruit behind.

Brushes are 4 1/4 inches in diameter, of one-piece construction and are mounted on bronze bearings or ball bearings. Easily accessible for replacement. Power required, 1/2 h. p. Sizes, 1 to 10 car capacity.

May we submit a proposal for one of these fine machines for your plant? No obligation, of course.

Food Machinery Corporation

FLORIDA DIVISION

Dunedin, Florida

THE GROWERS' OWN PAGE

THE HOMESTEAD AMENDMENT AND THE CITRUS GROWER

Perhaps no proposed constitutional Amendment in Florida has ever generated a keener and more wide spread interest in the minds of the people than has the proposed homestead exemption of homesteads up to the valuation of \$5000.

A moment's reflection will indicate why this is true. Comparatively few homesteads in Florida are today carried on the assessment rolls for a greater valuation than \$5000. The assessed valuation of the home of the man of very limited means and moderate salary is usually assessed for not exceeding \$1000, or \$1500. At first blush, it is clear, therefore, that the Amendment has no relationship to the just theory that the "inability to pay" should be at least one of the guiding stars to government in the bestowal of exemptions from taxes. Further, no considerable reflection is needed for the voter to realize that the Amendment if adopted means a complete re-vamping and re-making of the present scheme of taxation now existing in this State.

The citrus grower is, with every other substantial interest in the State, concerned with such vital changes.

The amount of the tax paying wealth which would go off the books in proportion to the total taxable wealth, varies in the different counties. In some stable and substantial counties, it is not indicated, that there is not a single homestead in the county assessed for as much as \$5000, and in some such counties, the business blocks are comparatively small and of no large assessed valuation. Many such counties report that 50% or more of the taxable wealth would be thus eliminated. In other counties, having many large office buildings, hotels, apartment houses, valuable business properties, etc., the percent would be smaller. In

This department is devoted to the growers, for their use in giving expression to their views and a discussion of growers' problems. Any grower is welcome to make use of this department for the discussion of topics of interest. The only requirements are that the articles must be on some subject of general interest, must be reasonably short and must be free from personalities. The editor assumes no responsibility for views expressed, nor does publication imply endorsement of the conclusions presented.

the state as a whole, however, it is indicated that somewhere in the neighborhood of 35% of the present taxable wealth would be eliminated by the Amendment. If true, this would probably indicate a larger percent of tax revenue that would be thus eliminated as taxes on homes are more uniformly and regularly paid than on other properties. The total revenue thus lost would probably be between twelve and fifteen million although many conservative investigators have estimated the latter or even a larger amount as more nearly correct. It is also pointed out that the loss of this sum of money

would be reflected only in the maintenance of schools and the maintenance of city and county and state governments. The levies for interest and sinking funds for bonded debts would not in any way be diminished.

The question that immediately occurs to the mind of every thinking person is, "Where would the money be raised with which to fill this gap?"

Under our present State Constitutional, no state income tax is permissible. Nonexempt real estate could not possibly bear the additional burden and a general sales tax would be the only recourse. Opinion may be said to be divided in this State as to the justness and practicability of this source of taxation, but careful investigation justifies the statement that the necessary revenue could not be supplied from this source even if the sales of products from the farm and grove were taxed at the same rate as are the retail sales by the merchants. A general sales tax

(Continued on page 25)

"Jacksonville's Leading Hotel"



THE SEMINOLE

JACKSONVILLE, FLORIDA

CHAS. E. GRINER, Manager

A human, home-like institution where you will find your individual comfort and entertainment a matter of great importance.

A steel fireproof building located in the heart of the city

Every Room With Combination Tub and Shower Bath, Radio, Electric Ceiling Fan, Slit Door for Summer Ventilation, Comfortable Beds with Mattresses of Inner Spring Construction and Individual Reading Lamps

Detailed Soil Analysis and Interpretations, Estimation of Plant Food Requirements and Soil Testers.

\$2.50

SOIL LABORATORY
Frostproof, Fla.

*Real Economy
Requires*

"BALANCED"
Fertilizers



*Make
Every Acre
Do Its
BEST*

Insist On **ARMOUR'S**
BIG CROP
Fertilizers



If you are in doubt concerning the exact formula for your grove or truck crops, ask to have the Armour field representative make a study of your needs without cost or obligation.

QUALITY is the only measure of value — the one thing on which a choice of fertilizers should be based. That's why it's so important for growers to insist on Armour's BIGCROP Fertilizer for the fall application to citrus.

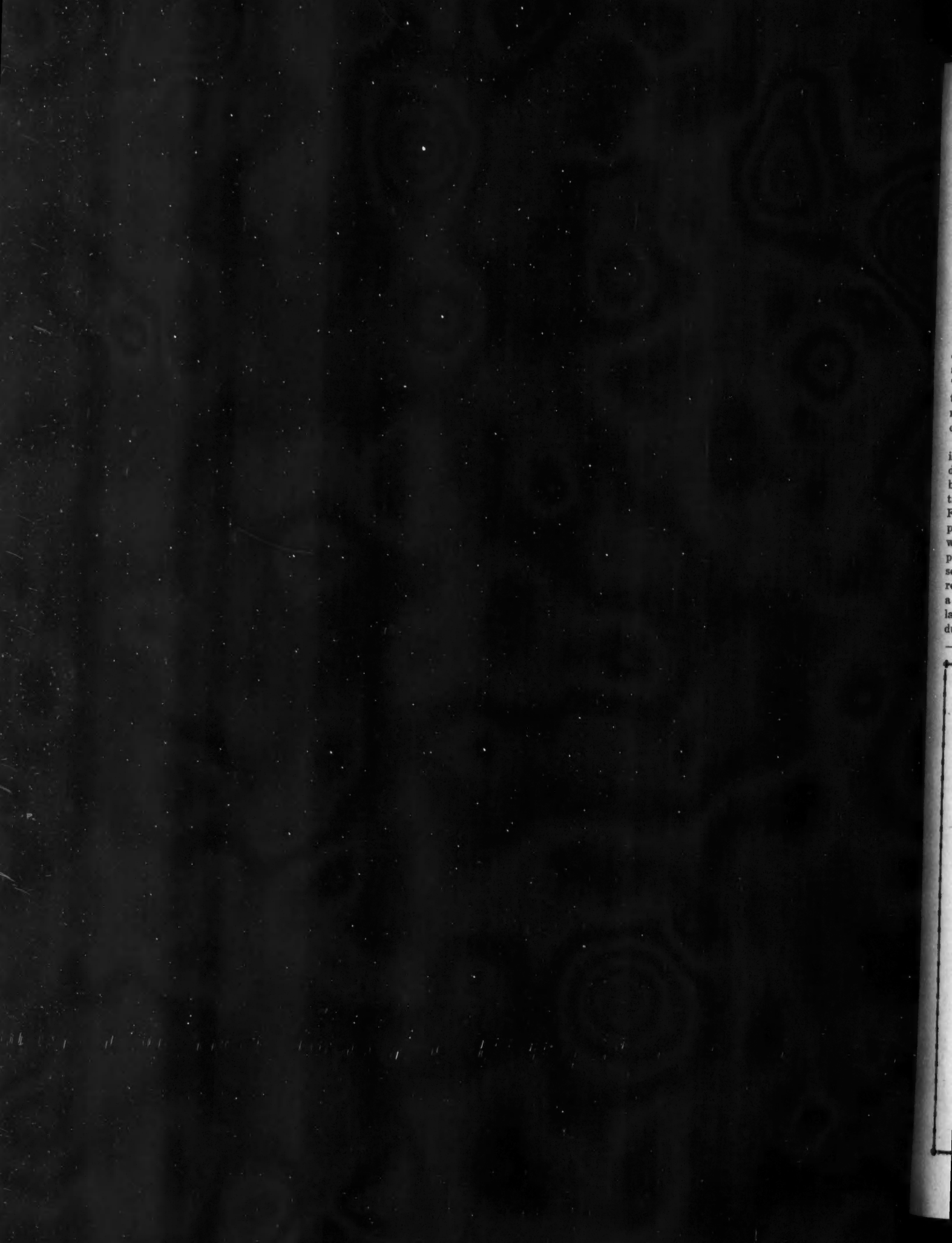
For more than 38 years Armour's BIG CROP Fertilizers have demonstrated their value by producing big crops of large, prime full-flavored fruits. They are made especially for Florida soils and crops and an application at this season will safeguard your trees through the winter and will swing them into bloom, new growth and action at the first impulse of spring.

Find out what "balanced" fertilizers will do for your grove by giving your trees a liberal application of Armour's BIG CROP Fertilizer this fall. There is a brand of Armour's BIG CROP Fertilizer to suit the particular requirements of your grove. Their record of proved results, the unvarying excellence of their quality and the skill with which they are balanced assure you of a maximum in plant food value.

Prices Now on a Delivered Basis
ARMOUR FERTILIZER WORKS
Jacksonville, Florida

Get prices from our Local Selling Agent or our Field Representative

MAKE EVERY ACRE DO ITS BEST



THE GROWERS OWN PAGE

(Continued from page 20)

must be held within reasonable bounds or it destroys business. The State of Mississippi with a year round population one-third greater than Florida, has a general sales tax which the Legislature of that State felt was as large as business interests could stand. That State is now raising approximately three million dollars per year through this form of taxation. It is probably fair to say that the State of Florida could not depend upon raising more than five or six million dollars in this manner. This leaves a very wide gap between what would be lost to government by the Amendment and what could be raised in the form indicated.

Just what methods the State Legislature under pressure to raise additional revenue would devise is problematical. While the citrus industry is one of the most important in Florida, some eight or ten counties produce 90% or more of the output while the Legislative body is composed of representatives from sixty-seven counties. Should additional revenue measures take the form of a burdensome severance tax or of a larger bracket in a sales tax schedule on the theory that citrus pro-

THE CITRUS INDUSTRY

ducts are, after all, more of a luxury than a necessity, it would indeed be a detriment to the citrus grower.

In every event, the question is one that merits careful study on the part of the grower.

FRANK E. JENNINGS.

FERTILIZER TRENDS LEAD TO GREATER EFFICIENCY

Progressive trends in several important phases of fertilizer manufacture and use are contributing vastly to the efficient crop production, according to H. R. Smalley, chief agronomist, The National Fertilizer Association.

New facts on the methods for applying fertilizers, for example, may easily lead to additional profits of many millions of dollars, Mr. Smalley points out. Fertilizers, according to most recent knowledge, give far better results when applied in bands at the side of the row and slightly below the seed than when mixed with the soil. If this fact were brought to the attention of all farmers using fertilizer, their crop yields and profits would go up very appreciably.

Further trends of the present day toward the efficient use and manufacture of fertilizer include the sub-

stitution of neutral and basic for acid-forming fertilizers except in cases where acid fertilizers are best for a given crop.

For the past 50 years the plant food content of fertilizers has been rising and contributing commensurately to efficiency in fertilizer use.

It has recently been found that greater attention should be given the so-called minor plant foods, particularly magnesium, calcium, and sulphur. The trend of the present day leans toward meeting crop needs with these elements, and although calcium and sulphur are contained in practically all mixed fertilizers, Mr. Smalley states, no claim for them is usually made by the manufacturers.

Further progress is being made through a better understanding of the different forms of nitrogen and the reduction in the number of grades of fertilizers sold, Mr. Smalley explains.

FERTILIZE CITRUS EARLY

Citrus growers in Lake County are contemplating their fall fertilizing about a month earlier than usual due to heavy rains, reports County Agent Clifford Hiatt.

The Best Market In Florida

Is made up of the citrus growers of this state.

The logical medium through which to appeal to this group is

The Citrus Industry

because it is addressed solely to this group of readers.

A lot of advertisers have already learned this.

—A trial will convince you of the wisdom of this course.

Colored by Ethylene— Fruit brings "top prices"

In the coloring of fruit, science has found a method that costs little, and pays big. It's the **Ethylene** Gas coloring method.

Developed in cooperation with U. S. Department of Agriculture, the **Ethylene** Gas method is used by leading Fruit Exchanges, Associations and others, especially for Citrus fruits. It colors mature fruit in $\frac{1}{2}$ the time required with other methods . . . moreover **Ethylene** colors fruit evenly.

And, better yet, because fruit can be colored as wanted, the use of **Ethylene** Gas means . . . *your fruit goes to market when the price is at the top.* Cost? Only a few cents a full carload of fruit.

Learn about **Ethylene** fruit coloring. Write for the **FREE** booklet we offer . . . talk, too, with your Exchange Officials.

Sell tomatoes locally?

If so, pick them green-ripe and color them with **Ethylene**. You get them to market 2 to 4 weeks earlier than waiting for field ripening. Defeat field mice, wire worms, sun scald, cracking, wind and hail damage.

FREE Send for your copy today

This 20-page booklet, issued by the largest suppliers of **Ethylene** to the Citrus Industry, tells the story of **Ethylene** Gas for coloring mature fruit and vegetables . . . explains how it is used . . . by Fruit Exchanges and others. Write **Carbide and Carbon Chemicals Corporation**, Desk C, 30 East 42nd St., New York.

Unit of **UCC** and Carbon Corporation



Florida Citrus Exchange Observes Quarter Century Anniversary

Observing the twenty-fifth anniversary of the founding of the organization, the Florida Citrus Exchange was host to some six hundred Floridians at a noon luncheon at the Hillsboro Hotel in Tampa on October 12.

Men prominent in the financial, industrial and commercial life of the state were called upon to review the work of the Exchange during its quarter century of existence and to stress its importance to the industry and the place it holds in the estimation of several thousand grower-members throughout the state.

Among the achievements credited to the Exchange by these speakers as outstanding accomplishments of the past twenty-five years, were the following:

The sale of more than 100,000,000 boxes of fruit having a gross value of more than \$361,000,000 and bringing the growers a net return of more than \$240,000,000.

The development of sales promotion for the Exchange brands, Seal-Sweet and Mor-Juice, through sixteen Exchange offices in Northern Markets, and the highest type of representation in 145 other markets in 46 states, as well as able representation in European export markets.

The expenditure of \$4,250,000 for advertising and sales promotion of Exchange brands of citrus fruits.

A constant study to develop better and more economical methods of picking, packing, grading and selling fruit for grower-members, resulting in the lowest sales retain in Exchange history for 1934-35—a retain of only 10 cents per box.

The development of the more efficient district manager plan of field service, providing the highest type of executive experience at the service of local associations.

The organization of eighty local associations comprising some 6,000 grower-members.

Suggests Commodity Advertising

Paul S. Armstrong, general manager of the California Fruit Growers Exchange, suggested that Florida, Texas and California industries unite in a joint advertising campaign to increase the total consumption of citrus fruits.

"The outlook for the citrus indus-

try is the brightest in the field of agriculture in America," he said, "but it needs united action. Nature has been unconscious of our marketing problems during the years of depression, and we are faced with a big crop. But any industry selling the volume of its product that we have during the depression need look only to united action for success."

Emphasizing the value of advertising, he said his exchange had spent \$20,000,000 in a 27-year sales campaign for its fruit, and its 13,500 growers would spend five cents a box or \$1,300,000 for advertising during the coming season.

Suggests Cooperation

"Let me make a suggestion publicly," he said, "and that is to devote all advertising to increasing the total demand for citrus. Let us not waste the growers' money in trying to get business away from each other."

"We have other competition, other food products, tomato juice and others, and we shall have to devote our time and money to working together."

Armstrong said the average person consumes 72 oranges, 17 lemons and seven grapefruit a year.

"If we could get the average person to eat one more orange a year," he continued, "we would open a market for 1500 cars, and the consumption can be increased by advertising, in the last five years, depression years, the per capita increase has been 31½ percent. What other industry can show such a record?"

J. A. Griffin, president of the Exchange National Bank of Tampa and an exchange leader, welcomed the visitors to Florida and Tampa in behalf of "one of the greatest and most useful institutions in the state." He outlined the accomplishments of the exchange and its future job in merchandising Florida's largest crop.

"What this country needs to do and must do is more business," he said, "and I still believe that the rewards will go to the man who does the best job. I mention this now because all of us here are interested in the job the Florida Citrus Exchange has been doing during the last 25 years."

"Without criticism of anyone, I cannot subscribe to the philosophy of penalizing the fit to take care of the

unfit, and I haven't seen anybody yet who could boil it down to having the thrifty and prudent man destroyed to make a place for the extravagant and wasteful. I still believe the square shooter has the edge on the man who turns sharp corners. So, of course, if the country is to be carried forward, it will be carried forward by the trained and capable people, and I am not worried about it. We are going to do it."

Favors Advertising

Charles H. Walker, Bartow, reviewing the organization of the exchange in 1909, said many problems then were similar to those today, and he recommended an advertising campaign for grapefruit to solve this season's marketing problems.

Congressman Peterson mentioned his work on bills to reimburse growers for loss during the Mediterranean fruit fly campaign and to permit loans to small corporations. He said both bills would be pushed at the next session of congress.

C. E. Stewart, DeLand, gave a detailed history of the exchange, drawing frequent applause at the mention of its personnel and their accomplishments. He told of the progress in methods of picking, packing, shipping and selling citrus from "the time when an orange was something to be seen only at Christmas time" to the present day.

"What I said of the exchange in the city auditorium here 20 years ago remains true today," said R. P. Burton, sr., Leesburg, former sales manager of the exchange. "I said then that the seeds of cooperation had been planted in Florida and, despite temporary disasters, they were bound to grow."

Burton told of early selling problems and how they were overcome through the organization of a nationwide exchange sales organization.

Tells of Exchange's Origin

A. M. Tilden, Winter Haven, explained the conception of the exchange in the mind of Dr. W. F. Inman who had a hotel at Florence Villa and noted that fruit buyers at his hotel every season were engaged in work that could have been done by one man, thus saving their expenses. From this idea grew Florida's greatest cooperative marketing agency.

Lyons Named President Florida Agricultural Research Institute

At recent meeting of the members of the Florida Agricultural Research Institute, C. W. Lyons, of the Lyons Fertilizer Company was named president of that organization for the coming year.

Other officers elected at the meeting were B. F. Floyd, of Wilson-Toomer Company, vice-president; Gea. H. McCoy, of Swift and Company Fertilizer Works, secretary; and J. B. Dye of the International Chemical Corporation, treasurer.

In addition to the officers named the following were elected as directors: F. F. Coffee, Armour Fertilizer Works; W. H. Klee, Nitrate Agencies Company; and C. T. Melvin, Gulf Fertilizer Co.

Frank L. Holland continues as manager of the Institute with offices in Winter Haven.

The organization was formed about two years ago by eleven of the leading fertilizer companies doing business in Florida for the purpose of conducting some Research work of its own, and cooperating with other Research Agencies throughout the

state in the interest of the citrus and other agricultural industries. Since its organization this body has worked closely in collaboration with the



State College of Agriculture and with the State Experiment Station.

Among other immediate plans of the organization will be to work for a standardized system of making soil tests during the coming year. Such tests, it is felt by the members, should be standardized, and made by uniform methods in order to carry the degree of accuracy which such tests should have to be efficient and safe.

The report of the manager at the annual meeting was received by the members who were enthusiastic in their praise of the work which had been accomplished, and was under way.

Beef cattle strains bred at the Florida Experiment Station have produced meat surpassing in quality much of the product brought in from elsewhere, thus forecasting a tremendously enlarged local output when the ticks have been driven out.

In writing advertisers please mention THE CITRUS INDUSTRY.

Use GRANULAR 'AERO' CYANAMID ON YOUR GROVES *this Fall*

APPLY JUST PRIOR TO DISCING IN YOUR COVER CROP

Write for this leaflet at once.
Ask for X-303



Granular 'Aero' Cyanamid hastens decomposition and liberates the plant food contained in the cover crop for use by the trees.

Granular 'Aero' Cyanamid contains 22 per cent non-leaching nitrogen whose progressive availability produces even, steady development of trees and fruit.

Granular 'Aero' Cyanamid supplies 70 per cent soil improving lime which sweetens the soil.

The use of Granular AERO Cyanamid in the fall fits admirably into the program of citrus fertilization advocated by the Florida Experiment Station which recommends, for instance, that a 10-year-old tree should receive annually about 1½ pounds of ammonia and 2 pounds each of phosphoric acid and potash. This can be supplied by an application of 3 pounds of Granular AERO Cyanamid in the summer or fall, plus 8 pounds of 6-12-12 complete fertilizer twice a year.

A NUMBER OF SATISFIED CUSTOMERS IN FLORIDA USE OVER 100 TONS OF GRANULAR 'AERO' CYANAMID EACH ANNUALLY

AMERICAN CYANAMID COMPANY

Manufacturers of 'Aero' Cyanamid and 'Ammono-Phos'

1021 EDGEWATER DRIVE

ORLANDO, FLORIDA

'Aero' Cyanamid is Nitrogen plus Lime



PRODUCTION CREDIT IN FLORIDA

(Continued from Page 5)

Association forged ahead and of the help given it by the county agents can best be told in Overstreet's own words—words that modestly omit the important part he has played.

"One of our earliest problems," Overstreet says, "was to inform the citrus growers of the workings of our Association, who were eligible for loans, and how to proceed. We first contacted each county agent in our territory and explained to them in detail how the Association would function. We explained also what qualifications of a borrower must be as well as the type of borrower with whom we wished to deal. What we meant was the eligible borrowers must be individuals, partnerships, or corporations whose financial affairs were not such that they would be unable to give adequate security for their loan and also that they must be persons or concerns who consistently honor their obligations.

"We then asked the county agents to call special meetings of citrus growers in their respective districts so as to give us an opportunity to explain the workings of our Association. These meetings proved to be effective and satisfactory methods of acquainting the grower with both the purpose and the procedure of the organization. About 25 of these meetings were held in this manner, the attendance at many of them indicating a genuine and intelligent interest on the part of the growers.

"The county agents, since these meetings were held, tell us that the meetings have been extremely helpful to them, in that only growers who are eligible for loans have sought their assistance and advice in making application. From our own viewpoint also we find that the Association has been saved considerable time and expense by this method of contact; practically all the applications we have received have come from eligible borrowers who knew and understood our collateral requirements and general procedure. In view of the fact that this phase of our work was brought about largely through the effort and whole-hearted cooperation of our county agents, we cannot help but express our sincere appreciation for what they have done. They have reason to be proud of the part they have played in helping develop the Farm Credit Administration's production credit program in Florida. Our county agents are continuing to cooperate and to date account for an

THE CITRUS INDUSTRY

appreciably large number of the loans we have granted. The county agents are conveniently located geographically—that is they are readily accessible to the growers in their respective counties—and for this reason have had the initial handling of a large number of our applications.

"Although we do not contemplate lending more than a half-million dollars this season, despite the fact that twice this amount is available, we are concerned primarily with making only such loans as will be sufficiently sound as to maintain our stock in an unimpaired condition. We have endeavored, and we believe successfully, to deal only with growers who expect, and who are in a position, to repay their loans in full on or before the due date. We believe this is the only method by which a sound and permanent association can be built. Eventually, of course the stock will be owned exclusively by the growers themselves, this being the purpose and plan of the Farm Credit Administration program. The receipt of many unsolicited letters from our borrowers daily bear witness to the fact that we are being of service and are beginning to occupy a decidedly important place in the affairs of the Florida citrus grower."

AMERICA'S FIRST CITRUS GROVE

(Continued from Page 9)

covery of the mainland in 1513. The first permanent white settlement in the United States was begun in 1565 at St. Augustine, Florida. In 1528 the site of Pensacola was discovered; DeSoto is said to have made it the base for his supplies while exploring the interior in 1540. Pensacola is also said to have been a port of call between Vera Cruz (1520), on the east coast of Mexico and the Indies. From this point across the Isthmus of Panama, to Port San Blas and Cape San Lucas, the Spaniards explored and settled, and in 1587, Cavendish tells us he secured oranges at Port San Blas. From Lower California the fruits appear to have been disseminated to Upper California and the Port of San Diego, the site of which was found in 1602. But in California proper, oranges had to be cultivated, and this began with the missions established by Junipero Serra over a period of years from 1769 to 1823. Some of these missions were credited with as many as 1,000 to 2,000 fruit trees, many of which were orange trees.

Mr. Hume's suggestion of the dissemination of oranges by explorers

and Indians is upheld by the Encyclopedia Britanica. It states:

"Some of the earlier botanical explorers regarded oranges as an indigenous tree; but it was undoubtedly brought by the Spanish Colonists to the West India Islands, and was probably soon afterwards transplanted to Florida by them or their buccaneering enemies," and the article further cites Mr. Hume's book "Citrus Fruits," as an authoritative reference.

Today The Citrus Groves Follow Early Spanish Trails

The importation of seeds and immediate planting of groves and gardens, on Columbus' second voyage in 1493, shows the high esteem in which the Spaniards placed these fruits. Their nutritive qualities as a supplementary food for long sea voyages appears to have been recognized, even if their anti-scorbutic properties were unknown.

The citrus groves that began with Columbus' first planting in the West Indies and spread to Florida, today trail west across the Gulf states to Mexico and turn north into California, following the very paths of early Spanish migrations. There is no fruit which is so closely woven into American expeditionary history as the orange.

The first few seeds imported, and the crude orchard begun by Christopher Columbus in Hispaniola in 1493 were the genesis of what is today a one billion, five hundred million dollar industry, with an annual crop of from \$148,000,000 to \$200,000,000 and over, depending on varying factors. To Christopher Columbus, the planter and horticulturist, we express our gratitude and thanks.

Men are still losing ground in the war with parasite pests of domestic animals, says Dr. Maurice G. Hall of the U. S. Department of Agriculture. He attributes this increasing concentration of domestic animals and improved intercommunication between all parts of the world.

PATENTS

Send me sketch, picture, or model of your new invention. I will give you prompt report on its probable patentability based on a search of the patent records for a small charge.

PLANTS, BUSHES, TREES,
VINES, ETC.

can now also be protected by Patents.

International Building

GEORGE E. COOK

Washington, D. C.

Registered Patent Attorney

*Real Economy
Requires*

"BALANCED"
Fertilizers



*Make
Every Acre
Do Its*
BEST

Insist On **ARMOUR'S**
BIG CROP
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ARMOUR FERTILIZER WORKS
Jacksonville, Florida

Get prices from our Local Selling Agent or our Field Representative

MAKE EVERY ACRE DO ITS BEST

ONE CITRUS GROUP TURNS DOWN PRO- POSED AGREEMENT (Continued from page 19)

the Florida industry."

Immediate purpose of the organization, a resolution adopted by the group said, "shall be safeguarding and protecting of interests of all of us and the grower interest of Florida in connection with any citrus marketing agreement of license which may become effective as to marketing of Florida citrus fruits under the agricultural adjustment administration."

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, OF THE CITRUS INDUSTRY, PUBLISHED MONTHLY AT TAMPA, FLORIDA, FOR OCTOBER, 1934. COUNTY OF POLK, STATE OF FLORIDA.

Before me, a notary public in and for the State and county aforesaid, personally appeared S. Lloyd Frisbie, who having been duly sworn according to law, deposes and says that he is the Business Manager of The Citrus Industry and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher — Associated Publications Corp., Bartow, Fla.

Editor — S. L. Frisbie, Tampa, Fla.

Business Manager — S. Lloyd Frisbie, Bartow, Fla.

2. That the owners are:
Associated Publications Corporation,
Tampa, Florida.

S. L. Frisbie, Tampa, Fla.

S. Lloyd Frisbie, Bartow, Fla.

H. L. Gable, Lutz, Fla.

F. L. Skelly, Orlando, Fla.

Frank Kay Anderson, Altamonte Springs, Fla.

B. W. Skinner, Dunedin, Fla.

P. P. Wall, Mansfield, Ohio.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are:

Bankers Mortgage Co., Orlando, Fla.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company but also, in cases where the stockholders or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

S. LLOYD FRISBIE,
Business Manager.

Sworn to and subscribed before me this 8th day of October, 1934.

(SEAL) CLYDE GIBSON,
Notary Public.
(My commission expires 3-4-35)

THE CITRUS INDUSTRY

It was contended by a number of the growers and shipper attending the meeting that the secretary had named on the committee "the very men removed by one group as highly objectionable."

The meeting urged that grower members of the control committee be selected in accordance with the following principles:

"First—Outstanding character and experience of individual;

"Second—Fair proportionate representation to each group in the industry;

"Third—Fair geographical distribution among six districts set up in the agreement;

"Fourth—Elimination of grower members who are highly objectionable to group from which they are selected;

"Fifth—Confining Florida Citrus Exchange to two grower members in addition to its two shipper members."

Named on the charter committee

J. F. AHERN

Consulting Engineer

Specializing In

Diesel, Electric and

Hydraulic Engineering

Phone 7-4755 2365 Post St.

Jacksonville, Florida

E. L. LORD

Consulting Horticulturist.

Grove Advisory Service.

Economical, Safe, Effective.
Why not give your grove a break?

P. O. Box 757

Winter Haven, Fla.

CLASSIFIED ADVERTISEMENTS

PERSONAL

QUIT TOBACCO easily, inexpensively, without drugs. Send address. N. A. Stokes, Mohawk, Florida.

THRIFTY TREES and budwood from record performance Perrine Lemon parents, Persian Lime and other citrus varieties. DeSoto Nurseries, DeSoto City, Fla.

UP to \$20.00 paid for Indian Head Cents; Half Cents \$125.00; Large Copper Cents \$500.00, etc. Send dime for list. Roman-coinshop, D. Springfield, Mass.

WANTED: — Good second hand double orange sizer, which will run two cars. Christian & Neal, McIntosh, Fla.

October, 1934

to set up immediate organization of their association to carry out the program were: H. C. Case of Fort Myers, R. H. Boyd of DeLand; J. J. Parrish of Titusville; B. Kilgore of Clearwater; A. T. Deforest of Lakeland; W. J. Howey of Howey-in-the-Hills, and H. E. Fairchild, of Babson Park.

Chairman Kirkland said: "If national proration is forced on Florida, you might as well pull up your orange trees, for California will run you out of the east." He declared exorbitant freight rates, revised since California became a factor in citrus.

MEN WANTED—Sell Shirts. No experience necessary. Free samples. Commission in advance. Free ties with shirts. Carroll Mills, 875A Flatbush Av., Brooklyn N. Y.

CLEOPATRA Mandarin root-stock, lining-out size and larger. Also sour orange. Variety of buds on Cleo. Grand Island Nurseries, Eustis, Fla.

PUREBRED PULLETS FOR SALE—White Leghorns and Anconas ready to ship. Barred Rocks and R. I. Reds shortly. Several hundred yearling White Leghorns now laying 70%. Write or wire for prices. C. A. Norman, Dr. 1440, Knoxville, Tenn.

WANTED—To hear from owner having good farm for sale. Cash price, particulars, John Black, Chippewa Falls, Wisconsin.

LAREDO SOY BEANS, considered free from nematode, excellent for hay and soil improvement. Write the Baldwin County Seed Growers Association, Loxley, Alabama, for prices.

FANCY ABAKKA pineapple plants. R. A. Saeger Ankona, Florida.

FOR SALE—Selected budwood and trees of Perrine lemon, Tahiti lime, new varieties tangelos and other citrus. Ward's Nursery, Avon Park, Fla.

DETAILED SOIL Analysts, Interpretations. \$2.50. Soil Laboratory, Frostproof, Florida.

SCENIC HIGHWAY NURSERIES has a large stock of early and late grapefruit and oranges. One, two and three year buds. This nursery has been operated since 1883 by G. H. Gibbons, Waverly, Fla.

NEW COMMERCIAL lemon for Florida, the Perrine; proven. All residents need yard trees, keeping Florida money at home. Booking orders for budded stock for Winter delivery. DeSoto Nurseries, DeSoto City, Fla.

WANTED—To hear from owner of land for sale. O. Hawley, Baldwin, Wis.

SATSUMA BUDWOOD from Bearing Trees. Hills Fruit Farm, Panama City, Fla.

SEED—Rough lemon, sour orange, cleopatra. New crop from type true parent trees. Also thrifty seedlings. DeSoto Nurseries, DeSoto City, Florida.

BUDDED trees new Florida commercial lemon, proven, thin skinned, juicy, scab immune. Also rough lemon, sour orange and Cleopatra seed and liningout seedlings. DeSoto Nurseries, DeSoto City, Fla.

SEEDS—ROUGH LEMON, SOUR ORANGE. CLEOPATRA. Pure, fresh, good germination. Also seedlings lineout size. DeSoto Nurseries, DeSoto City, Fla.

CROTALARIA SPECTABILIS—Seed for sale. New crop, well cured, bright and clean. Price 25c per pound in 100 pound lots and over, 50c per pound in less quantities, f. o. b. Hastings, Bunnell, Lowell and San Antonio, Florida. F. M. LEONARD & COMPANY, Hastings, Florida.

WANTED—Position as packing house foreman; in citrus business twenty-five years; ten years' experience as foreman; married man. J. R. Henry, Okahumpka, Florida.